

# Laboratory Compact Overhead Stirrer -- Maxi Series



4.3 - inch TFT  
Touchscreen >



## Under "SMART" control technology:

- Maxi. Speed limitation. Can set up Maxi. rotational speed limitation. Improved safety feature.
- Constant speed control. It always runs at a constant speed as set, even when the viscosity of the sample changes during the stirring process. It can also perform short-term overload stirring, which is especially suitable for repetitive stirring processes. At the same speed, the greater the torque, the higher the power.



Lighting



Programing



Timer



Safety Lock



CW/CCW  
rotation



Ext. Temp.  
Probe



Wifi

## Features:

Equipped with a high-performance brushless motor

Power range from 200-300W

Superior speed control: **precise control of  $\pm 1$ rpm;**

**Minimum speed can be reached 3rpm**

### Maxi. speed limitation

Compact structure, easy to operate

Strong overload capacity

Long service life

Smooth and quiet operation

Stirring paddles are penetrable, accommodating stirring shafts of various lengths

## Smart function:

3.5-inch touch screen for intuitive operation, easy to use even with gloves

Clear display: speed, torque, time, temperature, program

Timer function

It allows for 6-step programming, with each step setting the corresponding speed, time, and forward/reverse rotation requirements.

Forward and reverse rotation settings to adapt to different types of samples

Optional External temperature sensor: measures sample temperature and can set a maximum temperature limit for the sample

Screen lock: locks the screen to prevent accidental operation

The LED light source facilitates the observation of samples.

Additional configurations are available upon request.

## External connections:

Wifi remote control

RS232 and USB interface supported

# Technical data (Maxi series)

Lab-Smart (Maxi series)		OS-150	OS-200	OS-200P	OS-250	OS-60MS
Power	W	200	220	300	300	280
Speed control accuracy				±1 rpm		
Volume (H.O)	L	150	200	200	250	60
Viscosity Max.	mpas	80,000	100,000	150,000	120,000	50,000
Torque Max.	Ncm	120	200	700	400	60
Speed range	rpm	20-2000	10-1500	3-500	6-1000	50-3500
Chuck range diameter	mm	0.5-10	3-16	3-16	3-16	3-16
<b>Motor</b>						
BrushlessDC		●	●	●	●	●
Permissible ON time				100 %		
Speed adjustment (Stepless)		●	●	●	●	●
Speed setting accuracy		±1 rpm	±1 rpm	±1 rpm	±1 rpm	±1 rpm
<b>Screen display</b>						
4.3" TFT Touch Screen		●	●	●	●	●
Timer				999h59min59sec		
6-step programming		●	●	●	●	●
Temperature display and setting		Yes, can set Max.temp. of medium ( use together with optional temp. sensor)				
<b>Smart function</b>						
Real-time speed display		●	●	●	●	●
Reverse Rotation		●	●	●	●	●
Wifi Interface		●	●	●	●	●
RS232 and USB Interface			●	●	●	●
LED lighting		●	●	●	●	●
Penetrating shaft (push-through when stopped)		●	●	●	●	●
Maxi. Speed limitation setting		●	●	●	●	●
Overload/overheat/over-current protection		●	●	●	●	●
Protection class according to DINEN 60529				IP42		
<b>Power requirement</b>						
Voltage/Frequency		230 V AC , 50/60 Hz				

Subject to change without notice.

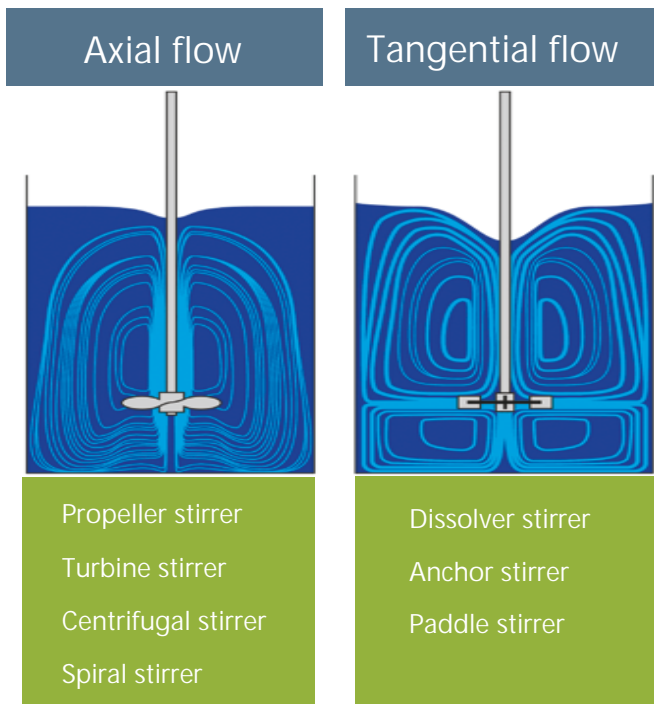
- Yes, Standard



We can provide more customized products to meet your requirements.

# Stirring elements

The Geometric Shape of the Stirring elements /// The Key to Successful Mixing



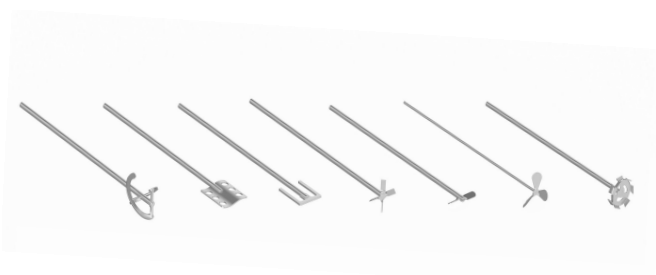
For an overhead stirrer to achieve excellent results, the key lies in the correct selection of the stirring elements (paddle). Depending on the type of the stirring paddle, different flow directions will be generated in the medium during operation. They also vary in terms of speed and the suitability for media with different viscosities. The stirring process is quite complex. The challenge lies in understanding laminar flow and turbulent flow, while also taking into account criteria such as the type of paddle used, the viscosity and density of the mixed substances, or the type of container. Selecting the appropriate stirring paddle can avoid unexpected shear forces.

#### Advantages:

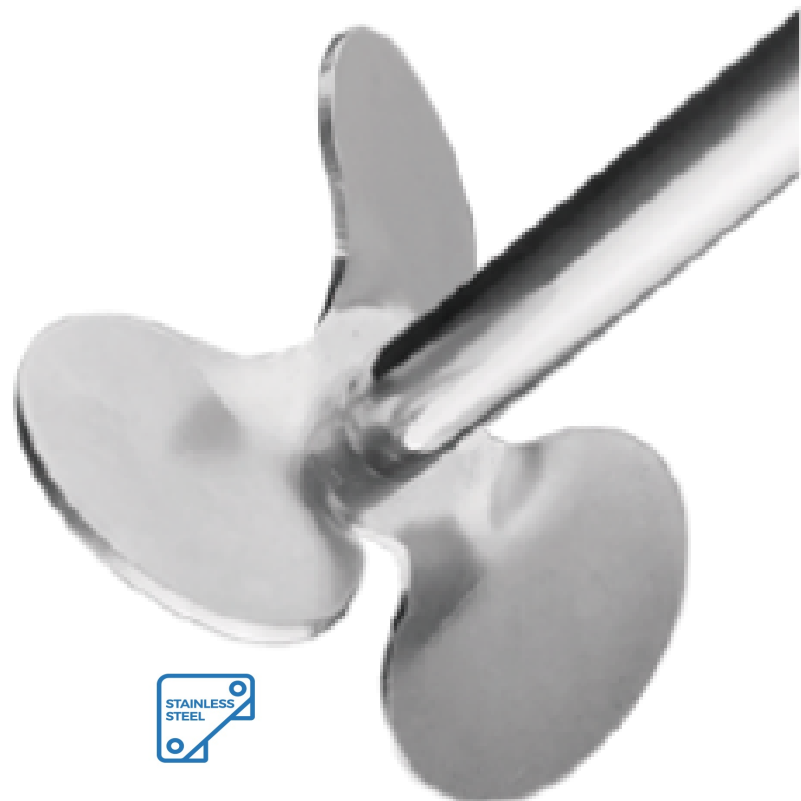
- A wide variety of types. Stainless Steel material.
- Complete range of sizes
- Compatible with various fluids: low to high viscosity

#### How to choose:

- Based on the characteristics of the sample: volume capacity, viscosity
- Based on the container: it is necessary to match the container size
- Based on the speed: low - high speed
- Based on the shear rate: low - high shear



We can also customize solutions according to your requirements.



# Shape/size of stirring elements

## Propeller stirrer, 3-bladed

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R1050	50	8	350	2000	90 00 06
– R1080	80	8	350	2000	90 00 07
– R1120	120	10	550	1000	90 00 09
– R1150	150	10	800	800	90 00 24

**Feature :** Generate axial flow, draw the sample to be mixed from the top and the bottom. Low shearing forces. High efficiency mixing.

**Application :** Mix the sample with low viscosity, at low-medium speed.



## Propeller stirrer, 4-bladed

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R2030	30	6	250	2000	90 00 01
– R2040	40	6	250	2000	90 00 02
– R2050	50	8	350	2000	90 00 03
– R2080	80	8	350	2000	90 00 04
– R2100	100	10	550	1000	90 00 05
– R2150	150	10	800	800	90 00 25

**Feature :** Generate axial flow, draw the sample to be mixed from the top and the bottom. Partial shearing forces. Standard accessory.

**Application :** Mix the sample with low-medium viscosity, at medium-high speed.



## Centrifugal stirrer

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R4060	60	8	350	2000	90 00 23
– R4100	100	8	350	1200	

**Feature :** Two-bladed, blades open with increasing speed. Generate axial flow, draw the sample to be mixed from the top and the bottom. Partial shearing forces. Suitable for narrow neck vessels.

**Application :** Mix the sample with low-medium viscosity, at medium-high speed.



## Dissolver stirrer

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R5030	30	8	350	2500	90 00 10
– R5050	50	8	350	2500	90 00 11
– R5080	80	8	350	2000	90 00 12
– R2100	100	10	550	1000	90 00 13

**Feature :** Two-bladed, blades open with increasing speed. Generate axial flow, draw the sample to be mixed from the top and the bottom. Partial shearing forces. Suitable for narrow neck vessels.

**Application :** Mix the sample with medium-high viscosity, at medium-high speed. Powder dissolved in the liquid; Cream homogenization; Particle reduction.



# Shape/size of stirring elements

## Anchor stirrer

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R6045	45	8	350	1000	90 00 14
– R6070	70	8	350	1000	90 00 15
– R6100	100	10	550	800	90 00 16
– R6150	150	10	650	800	90 00 17

**Feature :** Generate strong tangential flow, high shearing force at edges. minimum deposits on the vessel wall.

**Application :** Mix the sample with medium-high viscosity, at low-medium speed.

## Paddle stirrer

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R7050	50	8	350	1000	90 00 19
– R7070	70	8	350	800	90 00 20

**Feature :** Generate strong tangential flow, high shearing force at edges. minimum deposits on the vessel wall. Gentle the treatment.

**Application :** Mix the sample with medium-high viscosity, at low-medium speed.

## Spiral stirrer

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R8045	45	8	350	1000	90 00 28
– R8070	70	8	350	1000	
– R8100	100	10	550	800	
– R8150	150	10	650	800	

**Feature :** Generate axial flow, draw the sample to be mixed from the bottom to the top.

**Application :** Mix the sample with medium-high viscosity, at low-medium speed.

## Turbine stirrer

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Product ID
– R3030	30	8	350	2000	
– R3050	50	8	350	2000	
– R3070	70	10	350	1000	

**Feature :** Generate axial flow, draw the sample to be mixed from above. Minimum danger of injury of the vessel.

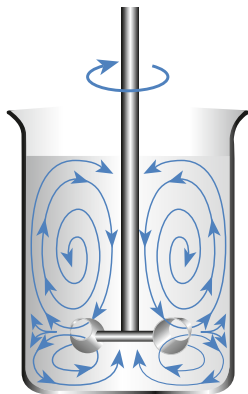
**Application :** Mix the sample with low viscosity and low shearing force, at medium-high speed.

# Jetting Stirrer

The stirring element is **degassing, high-turbulence stirrer**. It is based on the cone principle. It generates turbulence at the cone end through acceleration, displacement, and retardation, stirs the medium to make the fluid flow, and creates a new dynamic mixing motion.

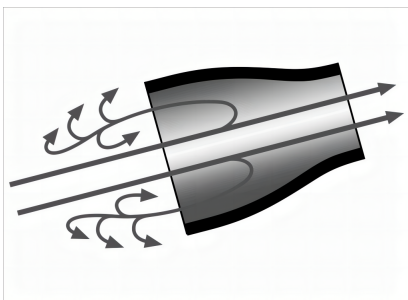
## Jetting Stirrer

Model	stirrer Ø(mm)	Shaft Ø(mm)	Shaft length (mm)	Speed Max. (rpm)	Suitable container Ø(mm)
- RJ60	60	8	350	2000	80 - 150mm
- RJ80	80	8	350	2000	110 - 200mm
- RJ100	100	8	350	1000	130 - 250 mm
- RJ120	120	8	350	800	170 - 350 mm



When the stirrer rotates, the liquid enters the conical opening of the stirring head. Under the action of the Venturi effect, the flow velocity increases, and at the same time, reverse turbulent flow is generated, thus perfectly demonstrating the characteristics of efficient mixing.

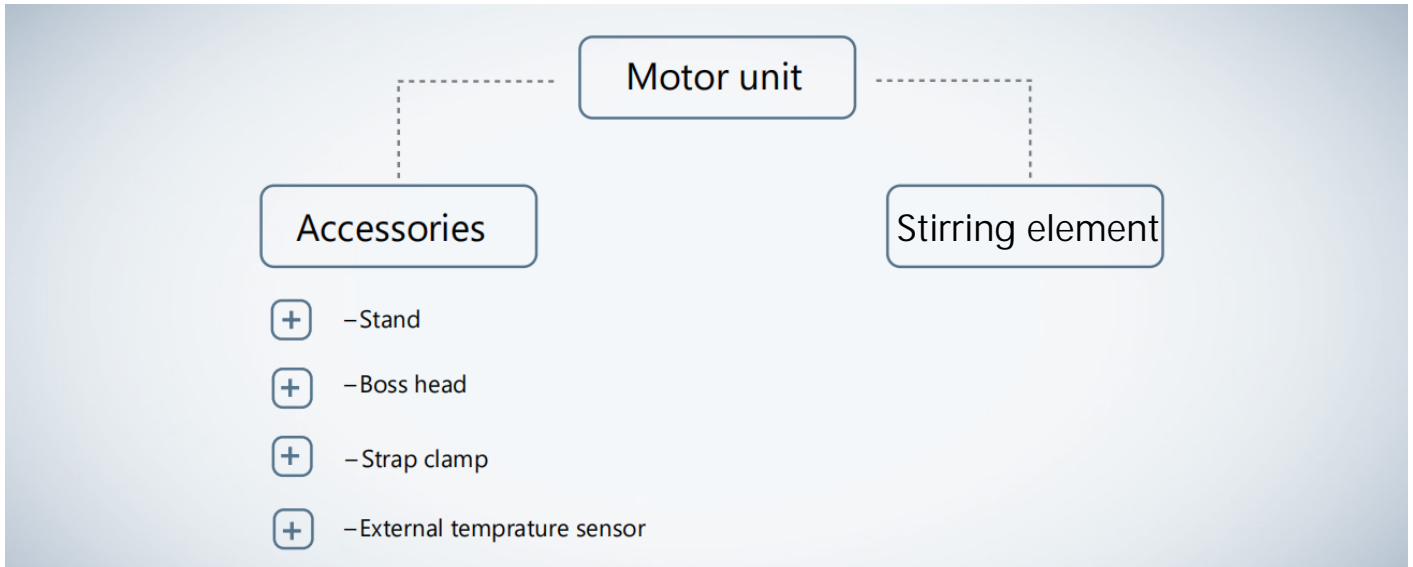
Since the stirring paddle utilizes the Venturi effect, it can achieve perfect mixing results at all times. Thanks to such excellent mixing performance, there's no longer a need for baffles to improve the mixing effect, scrapers to deal with the wall - sticking problem, or combined stirring heads to eliminate dead zones. This allows you to achieve perfect mixing in the shortest time and with the lowest power consumption while eliminating the need for additional equipment.



The stirring principle achieves complete degassing of the medium, effectively preventing the entry of foam and air. It is applicable to all stirring media, whether they are low - viscosity or high - viscosity media. Even at low rotational speeds, the stirring paddle can generate turbulence and achieve a good mixing effect. It can achieve a good mixing effect for high - viscosity media and gels that cannot be processed by ordinary stirring paddles. The mixing process of the sample/media flow can be directly observed in a beaker.

- Better mixing effect (no dead zones and no sedimentation)
- Higher stirring efficiency (increased by at least 50%)
- Lower rotational speed (reducing energy consumption costs)
- Time - saving (saving 50% of the time at the same rotational speed)
- No bubble generation (minimal vortex pattern)
- Easy to clean

# Accessories

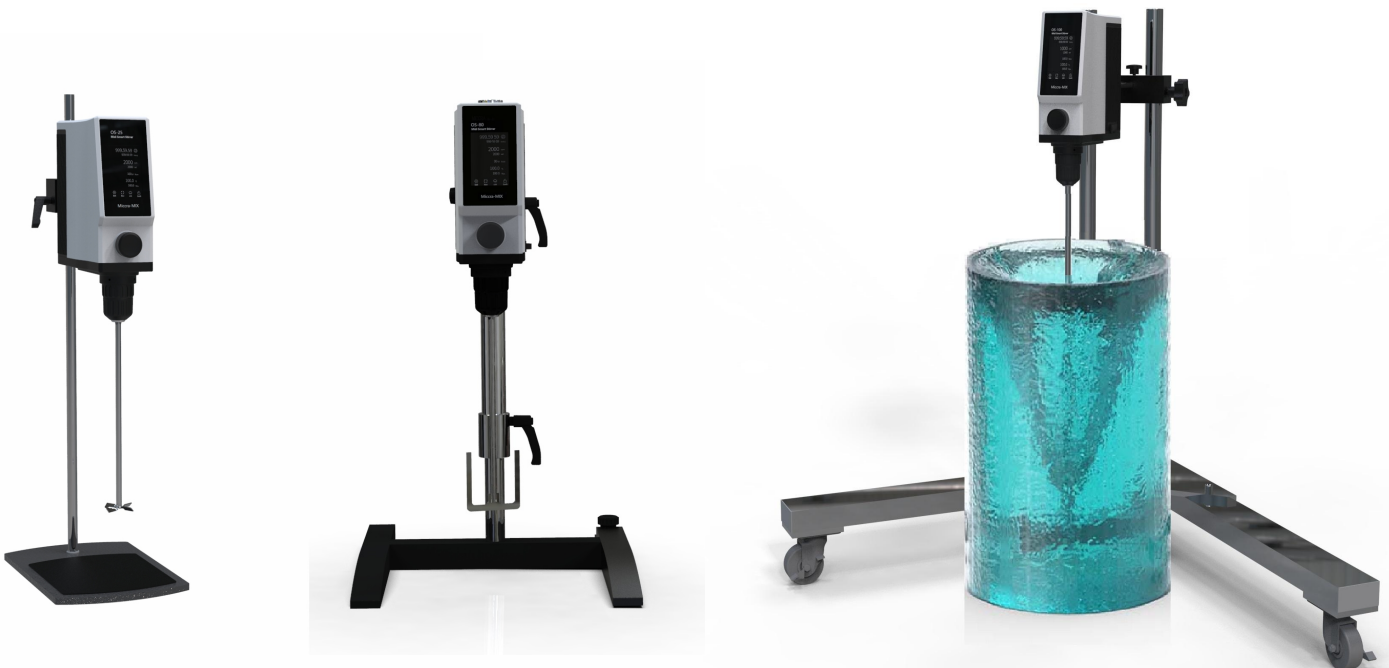


The stand in the SMART series come in a variety of different sizes and have multiple applications, suitable for various combinations of processing capacities and container sizes.

There are also various safety configuration options to ensure the safe progress of experiments and convenient operation!

## Advantages:

- Abundant configurations
- A wide range of stand types
- Compact structure for easy operation
- Good safety configurations
- Convenient for intelligent connection



### PS30 Plate Stand

- Diameter of support rod: 16 mm;
- Height: 750 mm;
- Dimensions (W x D): 220 x 340 mm

- adapted to series batch drives. With slip resistant foil.



### HS500 H-Type Stand

- Diameter of support rod: 28 mm;
- Height: 720 mm;
- Dimensions (W x D): 400 x 380 mm
- The base spacing: 300 mm

- adapted to series batch drives.



### HS500T H-Type Telescope Stand

- Diameter of support rod: 28 mm;
- Height: 1030 mm;
- Stroke: 400 mm;
- Dimensions (W x D): 400 x 380 mm

- adapted to series batch drives.



### LS800T L-Type Telescope Floor Stand, movable

- Diameter of support rod: 35 mm;
- Height: 1570 mm; Stroke: 500 mm;
- Dimensions (W x D): 800 x 800 mm

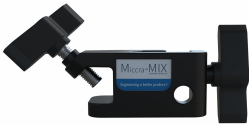
- adapted to series batch drives.





#### BH18 Boss head for single rod

- Adapted to stand PS30;
- For use with Mini series drives.



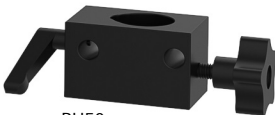
BH40

#### BH40 Boss head for double rods

- Adapted to stand PS30;
- For use with Midi series drives.

#### BH50 Boss head for double rods

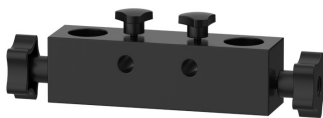
- Adapted to stand HS500 & HS500T
- For use with Midi series drives.



BH50

#### BH80 Boss head for double rods

- Adapted to stand LS800T;
- For use with Midi series drives.



#### SK200 Strap Clamp

- Adapted to Stand PS30.



#### SK200T Strap Clamp

- Adapted to Stand PS30.

### NT01 External temperature sensor

- SSL material probe
- Length of probe: 220 mm
- Diameter of probe: 4 mm
- Length of cable: 1000 mm

- For use with Midi series drives.



### CL01 Clip for Temp sensor

- UC material.
- Adapted to NT1 temp sensor
- Suitable container: beaker



### Data Cable 01

- Adapted from RS232 to USB.
- Cable length: 1200 mm.

- For use with Midi series drives.



### Chuck protective cover PC45

- Protect chuck
- Prevent the corrosive gas from corroding the chuck.

- For use on series overhead stirrers



### BA2/1 Double-rod to single-rod adapter

- Diameter of single rod : 16mm
- Length of single rod : 200mm
- Minimum usable length : 174mm
- For use on series Mini and Midi series stirrers

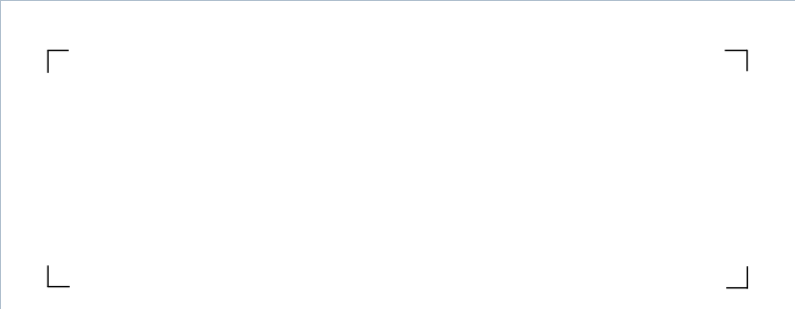


### Viscosity Ranges

Viscosity Classification	(mPa·s)
Very Low (VL)	0-100
Low (L)	100-1,000
Medium (M)	1,000-10,000
High (H)	10,000-1,000,000

### Sample Viscosity Reference

Sample	mPa·s
Water	1
Kerosene	10
Lubricant Oil	100
Glycerin	1,000
Shampoo	3,000
Refined Honey	7,000
Moisturizing Cream	8,000
Honey	10,000
Chocolate Syrup	25,000
Ketchup	50,000
Toothpaste	70,000
Asphalt	100,000



Miccra-Mix Process Technology Co.,Ltd.

Room 308, No.19, Nanxiang 2nd Road, Huangpu District,Guangzhou,China  
Phone: +86 20 8985 7789

Miccra GmbH  
Im Mittelfeld 12 79426 Buggingen – Germany



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